IN THE CLAIMS

Page 19, line 1, change "Patent Claims" to --What is claimed is:--.

Claims 1-19 (cancelled).

20. (New) A method for identifying fluorescing, luminescing and/or absorbing substances on and/or in sample carriers, particularly with high sample throughput in sample screening and/or in diagnostics, such as in the analysis of samples in microtiter plates comprising the steps of:

carrying out a spectral splitting of sample light;

carrying out detection in a plurality of detection channels; and

carrying out at least one summation and/or combination of signals of the individual channels for at least a portion of the detection channels.

21. (New) The method according to claim 20, comprising arranging at least one standard sample and/or at least one blank sample on the sample carrier in addition to the substances to be examined.

22. (New) The method according to claim 20, comprising recording a spectrum of at least one standard sample in a first step.

23. (New) The method according to claim 20, comprising determining spectral regions of interest in which measurement is carried out automatically or by input means, based on measured standard spectra.

24. (New) The method according to claim 20, comprising summing the detection channels of at least one spectral region of interest.

25. (New) The method according to claim 20, comprising carrying out a change in the regions of summed detection channels and/or individual detection channels or switching off groups of channels.

26. (New) The method according to claim 20, comprising determining a relative signal intensity of the substance is determined from the quotient (PRB-BLK) / (STD-BLK), where PRB is the measured signal of the substance, STD is the measured signal of the standard sample, BLK is the measured signal of the substrate (blank sample).

27. (New) The method according to claim 20, comprising taking an average over a plurality of samples for STD and/or BLK.

28. (New) The method according to claim 20, comprising carrying out a spectral unmixing according to at least two components for at least one substance based on standard samples.

29. (New) The method according to claim 20, comprising taking the ratio of at least two components by unmixing.

30. (New) The method according to claim 20, further comprising the step of providing a dispersive element, such as a grating or prism, and a receiver arrangement which is spatially resolving in at least one direction.

31. (New) The method according to claim 30, wherein the receiver arrangement is a line detector.

32. (New) The method according to claim 31, wherein the line detector is a multichannel PMT.

33. (New) The method comprising carrying out a spectral weighting between a plurality of detection channels, a summation of the weighted channels of the signals of the detection channels.

34. (New) The method according to claim 33, wherein the weighting curve is a straight line.

35. (New) The method according to claim 33, wherein signals of detection

channels are converted and digitally read out, and the weighting and summation are carried out digitally in a computing device.

36. (New) The method according to claim 33, wherein the weighting and summation are carried out with analog data processing by means of a resistor cascade.

37. (New) The method according to claim 36, wherein the resistors are adjustable.

38. (New) The method and/or arrangement according to claim 33, wherein the weighting curve is adjustable.

39. (New) An arrangement for identifying fluorescing, luminescing and/or absorbing substances on and/or in sample carriers, particularly with high sample throughput in sample screening and/or in diagnostics, such as in the analysis of samples in microtiter plates comprising:

means for carrying out a spectral splitting of sample light;

means for carrying out detection in a plurality of detection channels; and

means for carrying out at least one summation and/or carrying out a combination of signals of the individual channels for at least a portion of the detection channels.

40. (New) The arrangement according to claim 39, wherein at least one standard sample (STD) and/or one blank sample (BLK) are/is arranged on the sample carrier in addition to the substances (PRB) to be examined.

41. (New) The arrangement according to claim 39, wherein a spectrum of at least one standard sample is recorded in a first step.

42. (New) The arrangement according to claim 39, wherein spectral regions of interest in which measurement is carried out automatically or by input means based on measured standard spectra.

43. (New) The arrangement according to claim 39, wherein the detection channels of at least one spectral region of interest are summed.

44. (New) The arrangement according to claim 39, wherein means are included for carrying out a change in the regions of summed detection channels and/or individual detection channels or for switching off groups of channels.

45. (New) The arrangement according to claim 39, wherein means are included for determining a relative intensity of the substance from the quotient

(PRB-BLK)/(STD-BLK), where PRB is the measured signal of the substance, STD is the measured signal of the standard sample, BLK is the measured signal of the substrate (blank sample).

46. (New) The arrangement according to claim 45, including means for taking an average over a plurality of samples for STD and/or BLK.

47. (New) The arrangement according to claim 39, including means for carrying out a spectral unmixing according to at least two components for at least one substance based on standard samples.

48. (New) The arrangement according to claim 39, including taking the ratio of at least two components by unmixing.

49. (New) The arrangement according to claim 39, wherein a dispersive element, such as a grating or prism, and a receiver arrangement which is spatially resolving in at least one direction are provided.

50. (New) The arrangement according to claim 49, wherein the receiver arrangement is a line detector.

51. (New) The arrangement according to claim 50, wherein the line detector is a multichannel PMT.

52. (New) The arrangement according to claim 39, including means for carrying out a spectral weighting between a plurality of detection channels, a summation of the weighted channels of the signals of the detection channels and a summation of the detection channels.

53. (New) The arrangement according to claim 52, wherein the weighting curve is a straight line.

54. (New) The arrangement according to claim 52, including means for converting and digitally reading out signals of detection channels and the weighting and summation are carried out digitally in a computing device.

55. (New) The arrangement according to claim 49, wherein the weighting and summation are carried out with analog data processing by a resistor cascade.

56. (New) The arrangement according to claim 55, wherein the resistors are adjustable.

57. (New) The arrangement according to claim 52, including means for adjusting the weighting curve.